

What is claimed is:

- SVP 4)
1. A DNA vaccine comprising a naked DNA incorporating and expressing *in vivo* a polynucleotide encoding an antigenic polypeptide and at least one adjuvant compound chosen from the polymers of acrylic or methacrylic acid and the copolymers of maleic anhydride and alkenyl derivative.
 2. The vaccine according to Claim 1, characterized in that it comprises, as adjuvant compound, a polymer of acrylic or methacrylic acid cross-linked with a polyalkenyl ether of a sugar or polyalcohol.
 3. The vaccine according to Claim 2, characterized in that the polymer is cross-linked with an allyl sucrose or with allylpentaerythritol.
 4. The vaccine according to Claim 1, characterized in that it comprises, as adjuvant compound, a copolymer of maleic anhydride and cross-linked ethylene.
 5. The vaccine according to Claim 1, characterized in that the adjuvant compound is present in the vaccine in an amount of 0.01% to 2% w/v.
 6. The vaccine according to Claim 5, characterized in that the adjuvant compound has a concentration of 0.06 to 1% w/v.
 7. The vaccine according to Claim 1, characterized in that the naked DNA is a plasmid.
 8. The vaccine according to Claim 1, characterized in that it comprises a naked DNA incorporating and expressing a pig, horse, dog, bovine, cat or avian pathogen.
 9. The vaccine according to Claim 8, characterized in that it comprises at least one pathogen chosen from:
 - Aujeszky's disease virus
 - porcine influenza virus
 - porcine reproductive and respiratory syndrome virus
 - porcine parvovirus
 - hog cholera virus
 - Actinobacillus pleuropneumoniae
 - equine rhinopneumonia virus
 - equine influenza virus

- Cl. Tetani
- Eastern encephalitis virus
- Western encephalitis virus
- Venezuelan encephalitis virus
- B. burgdorferi
- Canine Distemper virus
- canine parvovirus
- canine coronavirus
- canine herpesvirus
- rabies virus
- bovine herpesvirus types 1 or 5
- bovine respiratory syncytial virus
- bovine pestivirus
- bovine parainfluenza virus type 3
- feline leukaemia virus
- feline panleukopaemia virus
- feline infectious peritonitis virus
- feline herpesvirus
- feline calicivirosis virus
- feline immunodeficiency virus
- Marek's disease virus
- Newcastle disease virus
- Gumboro disease virus
- avian infectious bronchitis virus
- avian infectious anaemia virus
- infectious laryngotracheitis virus
- avian leukosis virus
- avian pneumovirus
- avian influenza.

10. A method of enhancing a DNA vaccine which incorporates and expresses *in*

in vivo a heterologous polynucleotide by adding an adjuvant chosen from the polymers of acrylic or methacrylic acid and the copolymers of maleic anhydride and alkenyl derivative, as defined in Claim 1.

11. The DNA vaccine of claim 1, wherein the polynucleotide is a gene of a pathogenic agent.
12. The vaccine of claim 4, wherein the ethylene is cross-linked with divinyl ether.
13. The vaccine of claim 6, wherein the adjuvant compound has a concentration of 0.06 to 1% w/v.
14. The vaccine of claim 1, wherein the adjuvant compound is a carbomer or an EMA[®].